



# Insectary Notes

November/December 2009

## From the Editor



The new year brings a few changes and also takes us closer to the NS Forest Health Conference.

In December, Chrissy Campbell accepted a job with Nova Scotia Environment. As I wished her well,

I wondered just how things would progress with the conference since the lead organizer had just decamped to another department. Then two great things happened: Chrissy worked very hard before she left to ensure that she was leaving the conference planning in good order and Tanya Borgal was hired to step in as Science Officer, Pest Management. We wish Chrissy all the best in her new career path and welcome Tanya for a very busy couple of months. Tanya has written her first article in the Provincial Entomologist's Overview on page 6.

Don't forget to register for the NS Forest Health Conference . . . Info on page 7.

'Til next time,

*Jacqui*

Editing . . . a Rewording Activity

## Say What and Quotes . . .

You might be from the Maritimes if . . .  
you experience all 4 seasons in 1 day.

*Dijon vu - the same mustard as before. -Unk.*

A hangover is the wrath of grapes. -Unk.

*A chicken crossing the road is poultry in motion.*  
-Unk.

A lot of money is tainted - 'taint yours and 'taint mine. -Unk.



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### OHNOSECOND

*That minuscule fraction of time in which you realize that you've just made a BIG mistake.*

### PERCUSSIVE MAINTENANCE

*The fine art of whacking the heck out of an electronic device to get it to work again.*

### ECLIPSE (ee-klips')

*What an English barber does for a living.*

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Editor: Jacqui Gordon (902.758.7014) [gordonjm@gov.ns.ca](mailto:gordonjm@gov.ns.ca)

## Focus

### Highlights from the Forestry Pest Management Forum

Gina Penny

1 - 3 Dec. 2009, Gatineau Quebec

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The Forum is a valuable chance to get together with colleagues and compare notes on the forest pest issues that have come and gone throughout the year. The following is a summary of the information presented.

Abbreviations: pop(s). = population(s), dec. = decrease, inc. = increase, defo. = defoliation, N = north, S = south, E = east, W = west, ha = hectare, L-2 = 2<sup>nd</sup> larval instar, M (in reference to a number) = million, K (in reference to a number) = thousand.

Provinces and Territories participating in the Forum: Alberta (AB), British Columbia (BC), Manitoba (MB), New Brunswick (NB), Newfoundland (NL), Nova Scotia (NS), Ontario (ON), Prince Edward Island (PE), Quebec (QC), Saskatchewan (SK), Yukon (YT).

First column (shaded) indicates the province/territory that reported on forest pests and diseases.

**Table 1. REPORTS ON EASTERN SPRUCE BUDWORM 2009.**

|           |  |
|-----------|--|
| <b>AB</b> | 2009 = Infested area further expanded; defo. = 163,701 ha. Defo. increased by only 2% from 2008. Based on trap catches a low risk of infestations occurring in 2010 is forecasted for many areas in NW that were infested in 2009. |
| <b>NB</b> | No defo. is forecast for 2010. Defo. was last recorded in 1995.  |
| <b>NS</b> | No overwintering larvae since 1995.  |
| <b>ON</b> | Remains at low levels throughout much of prov. Except for a multiple-year outbreak persisting between Sudbury and North Bay, 2009 defo. = 291,592 ha vs. 2008 = 418,767 ha. Tree mortality 2009 = 180,031 ha.                      |
| <b>QC</b> | 2009 defo. = 311,146 ha vs. 2008 = 133,603 ha. Infestation spread throughout the province. Control program in 2009 with Btk = 38,472 ha. Based on overwintering larvae forecast expecting defo. to inc.                            |
| <b>SK</b> | Defo. peaked in 2002 <700,000 ha. 2004 pop. crashed. 2009 pop. building = 33000 ha. 2009 = 1600 ha Cypress Hills Interprovincial Park outbreak. May have operational program in 2010 in the NE.                                    |
| <b>YT</b> | 2009 = 1,200 ha light defo. Pop. is in decline.  |

**Table 2. REPORTS ON MOUNTAIN PINE BEETLE 2009.**

|           |  |
|-----------|--|
| <b>AB</b> | The major forest pest in 2009. Flight into AB. Cold winter in reduced some pops.   |
| <b>BC</b> | Most dominant disturbance agent. 2009 = covered an area of >8.95M ha despite recording a drop in area attacked of 7.8M ha in 2008.   |
| <b>SK</b> | Designated as a pest under the Act. Their act gives them legislative power and power of access to private lands. Has a moratorium restricting the import/transport/storage of all pine forest products with bark attached. Seeing the most action in Cypress Hills. 300 trees have been flagged for removal. |
| <b>YT</b> | Set up trap trees; no beetles found. Also assessing potential climate change impacts on susceptibility of pine to MPB.   |

**Table 3. REPORTS ON HEMLOCK LOOPER 2009.**

|           |   |
|-----------|---|
| <b>NB</b> | 2009 = no defo. detected and pops. remain at endemic levels. No defo. is forecast for 2010.   |
| <b>NL</b> | 15,060 ha treated Foray 76B in the West.  |
| <b>NS</b> | Pheromone traps % positive high but pretty much same. Mean trap catch expect something similar to 2008 to 2009.                                 |
| <b>QC</b> | No defo. detected. Remote sensing allowed them to find 2009 = 7685 ha in the N near Labrador. Pheromones – no significant infestation expected. |

**Table 4. REPORTS ON BALSAM WOOLLY ADELGID 2009.**

|           |   |
|-----------|---|
| <b>NB</b> | 2009 plot (12) survey = pop. dec. at 10, no change at 1, and an inc. at 1.          |
| <b>NS</b> | Established a permanent sample plots in each Ecoregion. 12 plots in total.          |
| <b>PE</b> | Significant pest. Originally a problem in S of Kings Co. Now in all three Counties. |

**Table 5. REPORTS ON SPRUCE BEETLE 2009.**

|           |  |
|-----------|--|
| <b>BC</b> | Pop. continues to decline throughout the prov. = 30,000 ha reported.   |
| <b>NS</b> | Still wreaking havoc. Aerial surveys described as far as the eye can see. Plans still trying to get a handle. Red and white spruce damage. |
| <b>PE</b> | A problem province wide. Substantial amounts of damage.  |
| <b>YT</b> | 2009 Mortality = 3000 ha in SW, 2008 = 5000 ha; largest outbreak recorded in Canada. Pop. is in decline.                                   |

**Table 6. REPORTS ON JACK PINE BUDWORM 2009.**

|           |   |
|-----------|---|
| <b>MB</b> | Monitoring since last outbreak in 1985. Predicting good larval survival based on percentage of pollen cones.  |
| <b>NB</b> | Pops. remain at low endemic levels according to pheromone trap catches since 1997. No defo. expected in 2010.   |
| <b>NS</b> | Feeding on white pine. Two new areas of defo. in Digby and Queens County = 799 ha light defo. 2009 = huge drop in defo.   |
| <b>ON</b> | Since 2004, outbreak in NW, NE, and S regions. Outbreak continued in all regions 2009 defo. = 205,701 ha; 2008 = 168,453 ha. 2010 = overwintering larval surveys forecast some pockets of defo.; overall outbreak is expected to decline. |
| <b>QC</b> | Localized defo. L2 survey in progress.  |
| <b>SK</b> | No defo. detected. 2009 trap catches decreased.   |

**Table 7. REPORTS ON WESTERN SPRUCE BUDWORM 2009.**

|           |   |
|-----------|---|
| <b>AB</b> | Inc. in moderate defo.  |
| <b>BC</b> | Treated approximately 72K ha with Btk. 766K affected in 2009. |

**Table 8. REPORTS ON GYPSY MOTH 2009.**

|           |  |
|-----------|--|
| <b>BC</b> | Found in several locations in S. BC predominantly in the Lower Mainland and S Vancouver Island. Two areas are currently proposed for treatment in the spring of 2010.  |
| <b>MB</b> | Trapping and egg mass survey with CFIA since 2007. Pops. are on the rise. 2009 aerial spray = on under 10,000 ha with Mimic in the NW region.  |
| <b>NB</b> | 2009 = no defo. detected. 26% over-winter egg survival down for a 3rd consecutive year. Dec. in mean trap catches and new egg masses observed. 2010 = no defo. forecast.   |
| <b>NS</b> | In unregulated area, catches in New Glasgow, Pictou Co. remain high. Permanent traps in regulated zone show overall dec. in moth catches. No defo. noted.  |
| <b>ON</b> | Fungus <i>Entomophaga maimaiga</i> wiped out pop. across S. 2009 = 3638 ha of defo. of hardwoods in SW 2008 = 39,476 ha. Control programs 2009 = 80 ha city of London, 2008/2009 = various municipalities in SW and in Toronto, Oakville, and Mississauga. |
| <b>PE</b> | No larvae, occasional pupae. No defo.  |
| <b>SK</b> | Delta traps were deployed by the CFIA. 2009 = two traps were positive.   |

**Table 9. REPORTS ON FOREST TENT CATERPILLAR 2009.**

|           |  |
|-----------|--|
| <b>AB</b> | Main aspen defoliators. 2009 defo. = 247,284 ha was confined to scattered, small patches. 2009 pops. had a near total collapse mainly attributed to parasitism by biological agents. |
| <b>NB</b> | 2009 = marked inc. in the % positive traps and the overall mean trap catch. 2010 = no defo. forecast.  |
| <b>ON</b> | At endemic levels. Hardwood defo. 2009 = 8,912 ha N of Kingston. Defo. has never been recorded this far S.   |
| <b>PE</b> | Almost nonexistent over last two years. Will look for egg masses.  |
| <b>QC</b> | 2009 = 4,100 ha total defo.  |
| <b>SK</b> | No defo. detected.   |

**Table 10. REPORTS ON ASPEN DECLINE AND MORTALITY 2009.**

|           |  |
|-----------|--|
| <b>ON</b> | Resulting from previous defo. and drought was widespread in the NW, affecting 3,803,807 ha from Fort Frances to Red Lake and Geraldton |
| <b>SK</b> | 2007 = significant defo., 2008 = area decreased to <300 ha. In 2009 no foliar disease.   |

**Table 11. REPORTS ON BRUCE SPANWORM 2009.**

|           |  |
|-----------|--|
| <b>AB</b> | Main aspen defoliators. 2009 defo. = 247,284 ha was confined to scattered, small patches. 2009 pops. had a near total collapse mainly attributed to parasitism by biological agents. |
| <b>BC</b> | Area damaged 2009 = 637,239 ha – Peace Forest District. Area damaged 2008 = 97,804 ha.   |
| <b>ON</b> | 2009 defo. = 26,146 ha of several hardwood species in numerous pockets in the NE, and NW regions.  |
| <b>PE</b> | In small hot spots.  |

**Table 12. REPORTS ON LARGE ASPEN TORTRIX 2009.**

|           |  |
|-----------|--|
| <b>AB</b> | Main aspen defoliators. 2009 defo. = 247,284 ha was confined to scattered, small patches. 2009 pops. had a near total collapse mainly attributed to parasitism by biological agents. |
| <b>NB</b> | 2009 = pops. appeared to collapse with no signs of defo. High pops. are rare in the Maritimes.   |
| <b>ON</b> | 2009 defo. = 88,862 ha in numerous pockets from Sault Ste. Marie to North Bay.   |
| <b>QC</b> | Pop. is in decline.  |
| <b>SK</b> | 2009 defo. = 17,851 ha.  |

**Table 13. REPORTS ON DUTCH ELM DISEASE 2009.**

|           |  |
|-----------|--|
| <b>MB</b> | 37 cost sharing communities. 2009 = 9,513 total trees removed.   |
| <b>PE</b> | Prince Co. regulated. Central portion of province had a significant spike in mortality in 2009.  |
| <b>SK</b> | 2009 = throughout most of the natural range of elm in the prov. Administrative and operational program in the prov. Huge integrated program with Municipalities. Dutch elm disease municipal hazard # of elms removed 2008 = 108, 2009 = 89. Total elm tree removals 2008 = 464, 2009 = 359. No new infections detected in surveyed communities in 2009. |

**Table 14. REPORTS ON RED BAND NEEDLE BLIGHT 2009.**

|           |  |
|-----------|--|
| <b>BC</b> | Continues to spread in the NW portion of the prov. heavily impacting all ages of lodgepole pine. |
| <b>QC</b> | 2009 = increasing  |

**Table 15. REPORTS ON ABIOTIC FACTORS 2009.**

|           |   |
|-----------|---|
| <b>AB</b> | Windthrow and tornados - yes; Water logging - Yes   |
| <b>BC</b> | Hail Damage - Discovery of large areas in the Cariboo region. Was difficult to diagnose from the aerial survey and required ground confirmation.  |
| <b>ON</b> | Hail Damage - Damaged 1,147 ha of woodlots near Lindsay & Brampton, 468 ha S of Gogama. Windthrow and tornados - July 9 five tornados touched down in the NW = 7,270 ha were flattened. An August 20 tornado = 677 ha of damage S of Owen Sound. Another tornado touched down on the S shore of Lake Nipissing. |
| <b>YT</b> | Water logging - Over 1,200 ha of flooding mapped.   |



## Provincial Entomologist's Overview . . What's the Buzz?

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I often wonder what led me to study Forestry at the University of New Brunswick and where I developed a fascination with insects. As a child when I found what I thought was the coolest insect, I remember my mother not sharing my excitement in my crawly little treasures. Ha, ha, I don't think she liked insects very much! I was always someone that loved nature and needed to know how things worked . . . including how insects spend the winter.

Winter is here and many things have changed in preparation of these shorter, cooler days. The migrating birds have flown south, trees have lost their leaves, bats are hibernating, we changed our vehicle tires . . . the list goes on. Did you ever wonder where all the insects have

gone? Well it depends on what insect you are. Some insects, such as the Monarch butterfly, migrate south while others stay here surviving the cold temperatures by many different adaptations. Many insects, which overwinter as a larva, survive the cold by producing natural antifreeze. These larvae have the ability to replace the water in their bodies with glycerol which doesn't freeze. During the winter insects can also undergo diapause which is much like hibernation. While in diapause, they move slower, there's a reduced level of oxygen taken into the insects body, and they generally don't feed as much,

if at all. Much like us, insects also seek shelter during the winter. You can find insects under heavy covers of leaf litter, under rocks or logs, in the trunk of a tree, underneath the frozen ice of a pond or even in our own homes. Underneath the frozen ice of a pond you'll actually find some insects still very much active. The nymphs of dragonflies, stoneflies and mayflies live in ponds and continue feeding during the winter. They emerge as adults in early spring. Another insect you'll see active during the winter are adult springtails. They are tiny, 1 – 2 mm, black creatures that can be seen near trees during sunny winter days when the sun warms the surface of the snow. They are commonly known as snow fleas because they jump on the surface of the snow, feeding on decaying organic matter. These tiny insects are an example of one that has adapted to winter by the ability to produce natural antifreeze.

Think about when you're cold, a fast, nice and easy way to warm up is to snuggle with a loved one. Well insects 'snuggle' too. During the colder months, honey bees cluster together, with the queen bee at the centre, in order to maintain a comfortable hive temperature. The bees flex their wing muscles to generate heat. A key factor in the survival of honey bees is not just having enough honey to feed on all winter but also having the honey close to the queen and her young. Bees will actually starve themselves before they move away from the queen and her young, being true to their job of keeping the group warm. Having food in the hive but not leaving the group to feed, now that's commitment!

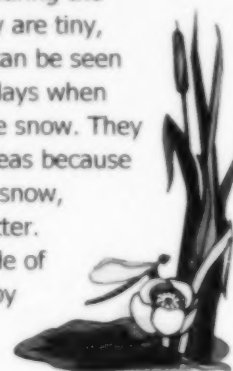
Most of our concerns are on those insects that are problems to us, i.e. pests. Where the season is now relatively quiet from pests and we're in the process of compiling all of our data from the season, I thought I'd take this time to introduce some adaptations of insects. I find insects amazing little creatures. They have been around for approximately 400 million years!

Until Next Time,

Tanya

Tanya Borgal

Science Officer, Pest Management



# Nova Scotia Forest Health Conference

23-24 February

# 2010

Holiday Inn

The conference is fast approaching!  
Although you can register at the door on the mornings of the conference,  
why not shorten your wait in line by sending in the registration form now.

Registration form, Agenda, and Hotel Information are available at . . .

[gov.ns.ca/natr/foresthhealth010](http://gov.ns.ca/natr/foresthhealth010)

Opening mixer and early registration on the evening of 22 February.

Contact Tanya Borgal for further information (902) 758 - 7238

[borgaltr@gov.ns.ca](mailto:borgaltr@gov.ns.ca)



*"Building the future through responsible management"*

## Bits and Pieces

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### Important Retirement Advice . . .

Working people frequently ask retired people what they do to make their days interesting.

Well, for example, the other day my wife and I went into town and went into a shop. When we came out, there was a cop writing out a parking ticket.

We went up to him and said, 'Come on man, how about giving a senior citizen a break?'

He ignored us and continued writing the ticket. I called him an overbearing jerk. He glared at me and started writing another ticket for having worn tires.

So my wife called him an idiot. He finished the second ticket and put it on the windshield with the first. Then he started writing a third ticket.

This went on for about 20 minutes. The more we abused him, the more tickets he wrote.

Personally, we didn't care. We came into town by bus and the car had an out-of-town plate. We try to have a little fun each day now that we're retired. It's important at our age.

## Monitor Watch

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### Solar Max and El Niño and BWA and what the heck is this winter made off!!!

Keith Moore

*Some are Weatherwise, and some are otherwise. -Benjamin Franklin*

I don't know about you - but is anyone else out there finding this to be a strange winter? - and I mean temperature-wise. I was talking to guys in Fire Management yesterday and they stated there was very little snow in Cape Breton and that there had been several grass fires already. And the temperature seems to be having a hard time getting to the nice colds I'd like to see. This time last year we were in a cold snap: around

-30°C. We haven't broken -21°C yet in northern NS, -18°C for central, and warmer than that to the southwest (-12°C to -15°C). Yikes! This means that by next fall we should start to see the effects of BWA gouting on those firs that had a good background population in fall '09. Western region, coastal areas: Lookout!



I have done a little bit of reading and supposedly, note I say supposedly, we are now starting to enter a time of more solar flares (Solar max) on the sun (good one, eh!) This means Solar flares around sunspots, can cause solar variations. According to one article, that "would be noticed by its effect on cell phones, GPS, weather satellites and many other modern technologies." (Science at NASA Solar Storm Warning) Some of our El Niño's and warmest periods on earth have happened during these Solar Maxes. Did you know a Solar Max is predicted to start as early as 2010 and 2011? And surprise! surprise! an El Niño is on the go in the pacific, which means warmer water in pacific (warmer by 3°C this time). This could affect the east coast of North America weather patterns for some of this winter and into early summer. The El Niño usually leaves us on the warm side of the jet stream and gives us some milder winters.



I am no climatologist, but back in 2003, we had just started to enter the return of cold winter temperatures, reduced solar flares activity, no El Niño's, and a major decline of balsam woolly adelgid populations. That cold cycle was predicted to last about seven years. Here we are seven years later and the solar flare activity is starting to kick

up. Does that mean we're going to have some more warm winter temperatures ahead of us? So far it would appear so. Hold your hats, lets hope for a real nasty arctic cold front to sweep into Nova Scotia over the next four weeks. I am ever the eternal optimist!!



P.S. Enjoy those northern lights!!!

Prepare for the worst. hope for the best, take what comes. Have a good winter everyone.

*Editor's Note: This article was written before the storm and cold snap on 29 January. We'll have an update on the cold (or not so cold) winter temperatures in the next issue.*



## THE LAST PUGH ...

Sitting on the side of the highway waiting to catch speeding drivers, a Police Officer sees a car puttering along at 22 KPH. Says he to himself: "This driver is just as dangerous as a speeder!" So he turns on his lights and pulls the driver over. Approaching the car, he notices that there are five old ladies - two in the front seat and three in the back - wide eyed and white as ghosts.

The driver, obviously confused, says to him "Officer, I don't understand, I was doing exactly the speed limit! What seems to be the problem?"

"Ma'am," the officer replies, "you weren't speeding, but you should know that driving slower than the speed limit can also be a danger to other drivers."

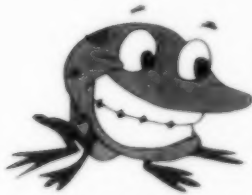
"Slower than the speed limit? No sir, I was doing the speed limit exactly . . . Twenty-two kilometres an hour!" the old woman says a bit proudly.

The Police officer, trying to contain a chuckle explains to her that 22 is the highway number, not the speed limit.

A bit embarrassed, the woman grins and thanks the officer for pointing out her error.

"But before I let you go, Ma'am, I have to ask, is everyone in this car OK? These women seem awfully shaken, and they haven't made a peep this whole time," the officer asks.

"Oh, they'll be all right in a minute officer. We just got off Highway 189."



A frog goes into a bank and approaches the teller. He can see from her nameplate that her name is Patricia Whack.

"Miss Whack, I'd like to get a \$30,000 loan to take a holiday." Patty looks at the frog in disbelief and asks his name. The frog says his name is Kermit Jagger, his dad is Mick Jagger, and that it's okay, he knows the bank manager.

Patty explains that he will need to secure the loan with some collateral. The frog says, "Sure. I have this," and produces a tiny porcelain elephant, about an inch tall, bright pink and perfectly formed. Very confused, Patty explains that she'll have to consult with the bank manager and disappears into a back office.

She finds the manager and says, "There's a frog called Kermit Jagger out there who claims to know you and wants to borrow \$30,000, and he wants to use this as collateral." She holds up the tiny pink elephant. "I mean, what in the world is this?"

The bank manager looks back at her and says . . . "It's a knickknack, Patty Whack. Give the frog a loan. His old man's a Rolling Stone."

Larry goes to his first show at an art gallery and is looking at the paintings. One is a huge canvas that has black with yellow blobs of paint splattered all over it. The next painting is a murky gray color that has drips of purple paint streaked cross it.

Larry walks over to the artist and says, "I don't understand your paintings."

"I paint what I feel inside me," explains the artist.

Larry says, "Have you ever tried Alka-Seltzer?"

